



The role of altmetric indicators in the promotion of scientific achievements

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Agenda

- 1. Scientific achievement and its assessment
- 2. Bibliometric indicators
- 3. Altmetric indicators
- 4. Altmetric data aggregators
- 5. The use of altmetrics case studies





Scientific achievements in the light of Polish law regulations

Scientific achievements – the various outputs and activities created or executed by scholars and investigators in the course of their academic and/or research efforts.

Polish regulations:

- Act of 14 March 2003 on the Academic Degrees and Title and Degrees and Title in the Arts, "Journal of Laws of the Republic of Poland" 2003, no. 65, item 595;
- Regulation of the Minister of Science and Higher Education of 17 October 2007 on the criteria and procedure for granting and settling funds for statutory activities, "Journal of Laws of the Republic of Poland" 2007, no. 205, item 1489;
- Act of 20 July 2018, The Law on Higher Education and Science, "Journal of Laws of the Republic of Poland" 2018, item 1668;
- Regulation of the Minister of Science and Higher Education of 22 February 2019 on the evaluation of the quality of scientific activities, "Journal of Laws of the Republic of Poland" 2019, item 392;
- Act of 13 January 2023 to amendment of the act The Law on Higher Education and Science, "Journal of Laws of the Republic of Poland" 2019, item 212.
- +
- Institutional criteria for evaluating scientific achievements and promotion procedures.
 - "scientific or artistic achievements";
 - "original construction, design or artistic achievements";
 - "serious teaching achievements";
 - "excellent scientific achievements";
 - "work of art of considerable importance";
 - "unique achievements";
 - "outstanding achievements".







Scientific achievements in evaluation process

"By scientific achievements it is meant:

- 1) scientific articles published in scientific journals and in peer-reviewed materials from international scientific conferences, included in the list of such journals and materials prepared in accordance with the regulations issued by the Minister of Science and Higher Education,
- 2) scientific articles published in scientific journals not included in the list of journals,
- 3) scientific monographs issued by publishers included in the list of such publishers prepared in accordance with the regulations issued by the Minister of Science and Higher Education, scientific editing of such monographs and chapters in such monographs,
- 4) scientific monographs issued by publishers not included in the list of publishers, scientific editing of such monographs and authorship of chapters in such monographs,
- 5) granted patents for inventions, protection rights for utility models".



Regulation of the Minister of Science and Higher Education of 22 February 2019 on the evaluation of the quality of scientific activities, "Journal of Laws of the Republic of Poland" 2019, item 392





Scientific achievements in promotion procedures

"A degree of doktor shall be awarded to an individual who has at least:

a) 1 scientific article published in a scientific journal or in conference proceedings which, in the year of publication of the article in its final form, were included in a list of Minister of Science and Higher Education, **or**

b) 1 scientific monograph issued by a publishing house which, in the year of publication of the monograph in its final form, was included on a list of Minister of Science and Higher Education, **or** a chapter in such a monograph, **or**

c) a work of art of considerable importance.

A degree of doktor habilitowany shall be awarded to an individual who:

1) possesses scientific or artistic achievements that constitute a significant contribution to the development of a particular discipline, including at least:

- a) 1 scientific monograph issued by a publishing house which, in the year of publication of the monograph in its final form, was included on a list of Minister of of Science and Higher Education **or**
- b) 1 series of thematically related scientific articles published in scientific journals or reviewed materials from international conferences, which, in the year of publication of the article in its final form, were included in a list of Minister of Science and Higher Education, or
- c) 1 design, construction, technological or artistic unique achievement accomplished;

2) shows significant scientific or artistic activity carried out in more than one higher education institution, academic or cultural institution, in particular foreign one.

The title of professor may be awarded to a person who:

1) holds outstanding scientific achievements at home or abroad,

2) participated in the works of research teams implementing projects financed through national or foreign competitions, or completed scientific internships in scientific institutions, including foreign ones, or conducted research or development works in higher education institutions or scientific institutions, including foreign ones".



Act of 20 July 2018, The Law on Higher Education and Science, "Journal of Laws of the Republic of Poland" 2018, item 1668





Scientific achievements in institutional criteria

POSITION	MINIMUM CRITERIA	PROMOTION CRITERIA	DISTINCTIVE CRITERIA
	Minimum requirements to obtain a	Requirements that must be met in order to be	Criteria constituting a premise for awarding prizes; with the
	positive grade for scientific work in	promoted between positions or to apply for a	assumption that the decision to award prizes is made by a
	a given position	degree in social communication and media	committee, based on one or more of the achievements indicated
		sciences at the Nicolaus Copernicus University	below
ASSISTANT	Obtaining a sum of points not less	In addition to defending a doctoral	Obtaining a sum of points not less than 100 for 3
ASSISTANT	than 60 for 3 publication slots	dissertation, obtaining the sum of points not	publication slots (including in the slots a maximum of one
	(including in the slots a maximum of	less than 120 for 3 publication slots (including	monograph* and one edition of a collective work in a
	one monograph* and one editorial of	in the slots a maximum of one monograph*	publishing house listed by the Ministry of Science and
	a collective work published in a	and one editorial of a published collective	Higher Education AND at least one article in a foreign
	publishing house on the list of the	work AND at least one article in a journal from	journal from the list of the Ministry of Science and Higher
	Ministry of Science and Higher	the list of the Ministry of Science and Higher	Education indexed in Q1 and Q2 of the Web of Science or
	Education AND at least one article in a	Education).	Scopus) AND
	journal from the list of the Ministry of		1. acting as a manager in a university, national or
	Science and Higher Education).		international grant (only from scientific institutions)
			2. or participation in a national or international grant as a
			contractor (only from scientific institutions)
			3. or publication of a monograph, edition or translation in a
			level II publishing house included in the currently valid list
			of publishing houses of the Ministry of Science and Higher
			Education publishing peer-reviewed scientific monographs,
			4. or a documented large impact on the development of
			science on a national or international scale in the form of
			prestigious scientific awards, a large number of citations,
			etc.
			*in the case of a monograph published in a publishing
	*in the case of a monograph	*in the case of a monograph published in a	house classified as level II in the list of the Ministry of
	published in a publishing house	publishing house classified as level II in the list	Science and Higher Education (for 200 points), the author
	classified as level II in the list of the	of the Ministry of Science and Higher	has the option of submitting a second monograph in the
	Ministry of Science and Higher	Education (for 200 points), the author has the	next slot
	Education (for 200 points), the author	option of submitting a second monograph in	
	has the option of submitting a second	the next slot	
	monograph in the next slot		

Evaluation criteria for research and teaching employees (scientific dimension) in the field of communication and media studies at the Nicolaus Copernicus University





Bibliometric indicators

Bibliometric – a set of mathematical and statistical methods used to analyze and measure the quantity and quality of books, articles, and other forms of publications, especially in scientific contents.

There are three types of bibliometric indicators: quantity indicators, which measure the productivity of a particular researcher; quality indicators, which measure the quality (or "performance") of a researcher's output; and structural indicators, which measure connections between publications, authors, and areas of research.



Main bibliometric data sources are Scopus and Web of Science databases.





Advantages of bibliometric indicators



They are a quantitative way of measuring your research impact, so are seen as objective.



The procedure is transparent and results can be reproduced using the same method.



They are inexpensive to produce and use.



They take relatively little time to produce and use.



They are scalable. You can look at bibliometrics on an individual, institutional, national or international level.



They are support for the universities deans in making personnel decisions.



They are support for the librarians in purchase of periodicals.





Disadvantages of bibliometric indicators

Metrics distinguish between what is cited and what is not cited, not what is necessarily of good quality.

It is perfectly possible for articles to be cited a lot but for negative reasons.

Θ

Metrics can be gamed i.e. exploited by researchers and journals to artificially boost their bibliometric scores.

Θ

Bibliometrics skew research by encouraging people to write papers they think will be cited more, not what is valuable in research terms.



Variations between areas of study need taking into account as publication frequency and citation cultures differ.



Some indicators are used for purposes other than those intended.



They have little use in the humanities and social sciences.





Altmetrics – an alternative to bibliometrics?







What is altmetric?

- broader perspective non-traditional bibliometrics proposed as an alternative or complement to more traditional citation impact metrics, they can be applied to people, journals, books, data sets, presentations, videos, source code repositories, web pages, etc.
- narrower perspective article-level metrics (ALM) citation metrics which measure the usage and impact of individual scholarly articles.

altmetrics = alternative metrics





Reasons for interest on altmetrics

The volume of academic literature explodes;

- In growing numbers, scholars are moving their everyday work to the web;
- · Citation counting measures are useful, but not sufficient;
- Traditional metrics are narrow; they neglect impact outside the academy, and also ignore the context and reasons for citation.
- 2010 r. article Altmetrics: a manifesto (Jason Priem, Dario Taraborelli, Paul Groth i Cameron Neylon):
 - Altmetrics expand our view of what impact looks like, but also of what's making the impact. This matters because expressions of scholarship are becoming more diverse;
 - Altmetrics are themselves diverse, they're great for measuring impact in diverse scholarly ecosystem;
 - Altmetrics are fast, using public APIs to gather data in days or weeks. They're open-not just the data, but the scripts and algorithms that collect and interpret it.;
 - Altmetrics look beyond counting and emphasize semantic content like usernames, timestamps, and tags;
 - Altmetrics aren't citations, nor are they webometrics; although these latter approaches are related to altmetrics, they are relatively slow, unstructured, and closed.

altmetrics

altmetrics: a manifesto

No ONE CAN READ EVERYTHING. We rely on filters to make sense of the scholarly literature, but the narrow, traditional filters are being swamped. However, the growth of new, online scholarly tools allows us to make new filters; these altmetrics reflect the broad, rapid impact of scholarship in this burgeoning ecosystem. We call for more tools and research based on altmetrics.

As the volume of academic literature explodes, scholars rely on filters to select the most relevant and significant sources from the rest. Unfortunately, scholarship's three main filters for importance are failing:



but not sufficient. Metrics like the h-index are even slower than peerreview: a work's first citation can take years. Citation measures are narrow; influential work may remain uncited. These metrics are narrow; they neglect impact outside the academy, and also ignore the context and reasons for citation.

 The JIF, which measures journals' average citations per article, is often incorrectly used to assess the impact of individual articles. It's troubling that the exact details of the JIF are a trade secret, and that significant gaming is relatively easy.

Priem J., Taraborelli D., Groth P., Neylon C., <u>Altmetrics: A manifesto</u>, 26 October 2010. <u>http://altmetrics.org/manifesto</u>





Altmetrics in the light of Web of Science resources

"altmetrics OR «article level metrics» OR ALM" AND 2010-2022 → 10,941 publications

Research areas

1,190 Engineering	785 Information Science Library Science	448 446 Chemistry Physics			
	614 Materials Science	420 Biochemistry Molecular Biology		381 Oncology	
1,060 Computer Science					
	592 Science Technology Other Topics	400 Environmental Sciences Ecolog	y		





Altmetrics in the light of Web of Science resources

Date of publication







Altmetrics in the light of Web of Science resources

Types of publications







Altmetrics in the light of Scopus resources

"altmetrics OR «article level metrics» OR ALM" AND 2010-2022 → 3,862 publications

Research areas







Altmetrics in the light of Scopus resources

Date of publication



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Altmetrics in the light of Scopus resources

Types of publications







Web of Science (735 publications) – Sources of publications

182 SCIENTOMETRICS	44 PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON SCIENTOMETRICS AND INFORMETRICS	19 JOURNAL OF DOCUMENTATION	19 ONLINE INFORMATION REVIEW	NLINE ASLIB FORMATION JOURNAL EVIEW INFORMAT MANAGEM		12 17TH INTERNATI CONFEREN ON SCIENTOM INFORMET ISSI2019 VOL II
	33 JOURNAL OF THE ASSOCIATION FOR INFORMATION SCIENCE AND TECHNOLOGY	12 JOURNAL OF INFORMATION SCIENCE	11 1 COMMUNIU IN COMPUTEI C AND INFORMATI	0 16TH INTERNAT CONFERE ON SCIENTON NEORME	10 ALTMETR FOR RESEARC OUTPUTS MEASURI	10 GLOBAL KNOWLED MEMORY AND COMMUNI
	31 INFORMATION RESEARCH AN INTERNATIONAL ELECTRONIC JOURNAL	12 PERFORMANCE MEASUREMENT AND METRICS	10 JOURNAL OF SCIENTOMETF		AND SCHOLAF SCHOLAF ACM IEEE JOINT CONFEREN(ON	9 INSIGHTS THE UKSG
53 JOURNAL OF INFORMETRICS	25 PROFESIONAL DE LA INFORMACION	QUANTITATIVE SCIENCE STUDIES 11 17TH INTERNATIONAL CONFERENCE ON	10 NAUCHNYE I TEKHNICHESP BIBLIOTEKI 10 SERIALS REVII	KIE g		TES IN





Web of Science (735 publications) – Affiliations of authors

115 USA	86 ENGLAND	47 45 FINLAND BRAZI		45 BRAZIL		43 INDIA		39 CANADA								
109 PEOPLES R CHINA	79 SPAIN	35 NETHERLANDS		22 SINGAPORE	21 ITALY	19 RUSS		SIA AUSTRIA								
88 SWEDEN	77 GERMANY			15 BELGIUM		13 SOU	13 SOUTH KOREA 12 HUNGARY 11 PAKISTAN		10 NORWAY							
		28 SOUTH AFRICA	14 DENMARK 13 AUSTRALIA		12 HU 11				10 SWITZER							





Web of Science (735 publications) – Most popular authors

55 Huvila I	35 Bommann L	14 Peters I	11 11 Holmberg K Kousha k		11 1 Kousha K		11 Ortega JL		11 Torres-salinas D			
		13 Haustein S	IO IO Glanzel W P Alhoori H P Frot M P Fang ZC		10 Glanzel W		9 Singh VK		9 VK Theng Y		9 YL Yu HQ	
40	27 Haunschild R	12 Bowman TD										
43 Thelwall M		12 Wang XW			8 Aljohani NR			8 Robinson-garcia N				
	20 Costas R	11 Gorraiz J			8 Bansha	al SK		7 Hou Jl	н			





Scopus (268 publications) – Sources of publications

Scientometrics	48
Library Philosophy And Practice	15
Journal Of Informetrics	10
Global Knowledge Memory And Communication	9
International Journal Of Information Science And	8
Management	
Profesional De La Informacion	6
Journal Of Scientometric Research	5
Journal Of The Association For Information	5
Science And Technology	
Library Hi Tech	5





Scopus (268 publications) – Affiliations of authors







Scopus (268 publications) – Most popular authors







Articles about altmetric in "Scientometrics"

244 articles – 4 subject areas



- area 1: general issues introducing a new type of metrics
- area 2: research on the existence of correlations between altmetrics and traditional indicators
- area 3: functionality and usability of applications, services, platforms aggregating altmetrics
- area 4: normalization of altmetrics





Altmetrics in the light of Google resources



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Types of altmetrics

Source	Types of altmetrics
Blogs	mentions
CiteULike	bookmarks
	citations
	exports/saves
	views
	downloads
EBSCO	supporting data views
	full text views
	HTML views
	PDF views
	abstracts views
F1000	reviews
	comments
Facebook	likes
	shares
	views
Figshare	downloads
	recommendations
	watchers
	downloads
GitHub	collaborators
	followers
	forking





Types of altmetrics

Source	Types of altmetrics
	reviews
Goodreads	ratings
	readers
Mendeley	readers
	full text views
PL oS	HTML views
FL03	PDF views
	abstracts views
	comments
SlidoSharo	views
SilueSilare	downloads
	bookmarks
	citations
	h-index
	reads
	research items
PasaarahGata	networking
ResearchGale	projects: total followers, total reads
	profile views
	followers
	followers, following
	RG score
	tweets
	shares
Twitter	comments
Iwitter	likes
	profile views
	engagement (click tracking)





Altmetrics tools





paperbuzz.org Dimpactstory





Altmetrics tools: Altmetric Explorer



- Tool created by Digital Science (integrated with Clarivate, Wiley, Smithsonian products);
- Altmetric Explorer allows users to search the Altmetric database;
- The number inside the colored circle (also called badge or donut) is the Altmetric Attention Score for the output being viewed;
- The score is derived from an automated algorithm, and represents a weighted count of the amount of attention;
- The Altmetric Attention Score always has to be a whole number. This means that mentions that contribute less than 1 to the score sometimes get rounded up to one;
- It monitors the following sources for mentions of research outputs: online reference managers (Mendeley), Wikipedia, citations indexes (Web of Science), social media (Twitter, Facebook), social bookmarking services (CiteULike), post-publication peer-review platforms (Publons), blogs, multimedia platforms (YouTube) community forums (Reddit) and other platforms (F1000, FigShare);
- The Research Outputs Tab displays the list of research outputs that are contained within a given search query;
- Mentions can be filtered by attention source type (e.g., tweets, news, likes, comments, shares, reviews etc.), mention outlet or author name, country, and mention time;
- Altmetric Explorer takes a "snapshot" of the entire database every day at midnight (UTC);
- Institutional subscription required to access all tools and services (e.g. creating an individual researcher profile);
- Free altmetric bookmarklet available to view the altmetrics for any journal article published with a DOI.

News	8
Blog	5
Policy document (per source)	3
Patent	3
Wikipedia	3
Peer review (Publons, Pubpeer)	1
Weibo (not trackable since 2015, but historical data kept)	1
Google+ (not trackable since 2019, but historical data kept)	1
F1000	1
Syllabi (Open Syllabus)	1
LinkedIn (not trackable since 2014, but historical data kept)	0.5
Twitter (tweets and retweets)	0.25
Facebook (only a curated list of public Pages)	0.25
Reddit	0.25
Pinterest (not trackable since 2013, but historical data kept)	0.25
Q&A (Stack Exchan)	0.25
Youtube	0.25
Number of Mendeley readers	0
Number of Dimensions and Web of Science citations	0

Default weightings



























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2

Biological sciences Hamilton, Ontario

+ Follow

University of Lethbridge, B.Sc., 1989 University of Victoria, Ph.D., 1996 McGill University, post-doctoral research, 1996-1999 University of Melbourne,post-doctoral research, 1999-2001 The University of Texas-Pan American, faculty, 2001-2015. The University of Texas Rio Grande Valley, faculty, 2015-2020. McMaster University, faculty, 2020-present.

Publications

- Faulkes Z, Feria TP, Muñoz J. 2012. Do Marmorkrebs, Procambarus fallax f. virginalis, threaten freshwater Japanese ecosystems? Aquatic Biosystems 8: 13. http://dx.doi.org/10.1186/2046-9063-8-13
- Carreon N, Faulkes Z, Fredensborg BL 2011. Polypocephalus sp. infects the nervous system and increases activity of commercially harvested white shrimp (Litopenaeus setiferus). Journal of Parasitology 97(5): 755-759. http://dx.doi.org/10.1645/GE-2749.1















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Altmetric

EXPLORER


Bookmarklet for Researchers

https://www.altmetric.com/products/free-tools/bookmarklet/







Bookmarklet for Researchers

3



Altmetrics tools: PlumX





- Tool created by Plum Analytics (In 2014, Plum Analytics became a part of EBSCO Information Services. In 2017, Plum Analytics joined Elsevier);
- Metrics provide insights into the ways people interact with individual pieces of research output (articles, conference proceedings, book chapters, and many more) in the online environment;
- PlumX tracks over 67 research artifact such as articles, presentations, patents, book chapters, datasets, videos musical scores, thesis and dissertations from over a 50 different sources;
- It monitors the following sources for mentions of research outputs: online reference managers (Mendeley), Wikipedia, citations indexes (Scopus, PubMed,SciELO, Crossref), social media (Twitter, Facebook), social bookmarking services (CiteULike), peer-review platforms (Amazon, Goodreads), blogs, multimedia platforms (YouTube, Vimeo) community forums (Reddit) and other platforms (F1000, FigShare);
- It collects following metrics: citation indexes, patent citations, clinical citations, policy citations, clicks, downloads, views, library holdings, video plays, bookmarks, code forks, favorites, readers, watchers, blog posts, comments, reviews, Wikipedia references, news media, shares, likes, comments, tweets;
- PlumX tracks many identifiers: DOI, ORCID ID, ISBN, URL, OCLC ID, Repository Handel URI, SlideShare ID, Scopus Author ID etc.;
- PlumX categorizes metrics into 5 separate categories: Citations, Usage, Captures, Mentions, and Social Media;
- Circles dynamically change size based on metrics in each category;
- Its metrics are incorporated into Elsevier's existing products, including Mendeley, Scopus, Pure Portal, ScienceDirect, SSRN;
- Currently PlumX indexes 9,5 billion interactions for over72+ million artifacts;
- PlumX refreshes the entire index every 3-4 hours to have the most up to date metrics from all of sources.









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Journal of Advanced Research Volume 37, March 2022, Pages 287-278

Nicotinamide mononucleotide (NMN) as an antiaging health product – Promises and safety

concerns

Harshani Nadeeshani^a, Jinyao Li[®], <u>Tianlei Ying</u>[®], <u>Baohong Zhang</u>[®], Jun Lu^{aefgeij} g

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tps://doi.org/10.1016/j.jare.2021.08.003 <	Get rights and content /
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Highlights

- Provides an overview of promises and safety concerns of NMN as an anti-aging product.
- Shows that NMN's beneficial effects supported by in vivo studies.
- Reveals that there is a lack of NMN's clinical safety and efficacy studies
- Suggests that proper clinical investigations are urgently needed on the effectiveness and safety of NMN supplementation.

Abstract

Background

Elderly population has been progressively rising in the world, thus the demand for anti-aging Tweets: heath products to assure longevity as well as to ameliorate age-related complications is also on the rise. Among various anti-aging health products, <u>nicotinamide mononucleotide</u> (NMN) has been gaining attentions of the consumers and the scientific community.

Aim of review

This article intends to provide an overview on the current knowledge on promises and safety concerns of NMN as an anti-aging health product.



Recommended articles

Safe and efficient 2D molybdenum disulfide platform for cooperative imaging-guided...

~

Journal of Advanced Research, Volume 37, 20.. Xin Li, ..., Lingxi Xing

Demetallation of organometallic and metalmediated reactions

The Innovation. Volume 3, Issue 4, 2022, Artic... Chao-Jun Li

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Students' perception and preference for online education in India during COVID -19...

Social Sciences & Humanities Open, Volume 3.. T. Muthuprasad, ..., Girish K. Jha

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Article Metrics	~		
Citations			
Citation Indexes:	82		
Captures			
Readers:	749		
Mentions			
News Mentions:	6		
References:	I		
Social Media			
Shares, Likes & Comments:	157		
Tweets:	34		



View details



About PlumX Metrics >





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RELX Group

KOMANAKA



Altmetrics tools: Paperbuzz



- Free and open service built by non-profit organizations ImpactStory and OurResearch with PKP's support;
- It takes the complex data collected by Crossref Event Data and calculates metrics for every article that has a digital object identifier (DOI) registered with Crossref;
- Its development was conducted as part of the CO.SHS project and has been supported by the Canada Foundation for Innovation (Cyberinfrastructure Initiative – Challenge 1 – First competition);
- Crossref's Event Data service provides publishers, editors, bibliometricians, research scientists, and third-party service providers with a stream of information detailing tens of millions of raw "interactions" between registered DOIs and online resources — some 65 million to date;
- Unlike traditional altmetrics providers, paperbuzz don't do any sort of aggregation. Instead, the organization provides "an ongoing stream" of subject-relation-object "triples", each of which describes an "interaction";
- The service captures interactions from a dozen sources, including Twitter, Wikipedia, Reddit, StackExchange, DataCite, and the Cambia Lens patent database.







Find a specific article

Paste a DOI to track its online buzz. (Currently results are incomplete for articles published before 2017).

Paste a DOI here

D. E. Acuna, S. Allesina, K. P. Kolding, *Predicting scientific success*, "Nature" 2012, iss. 489, pp. 201-202; DOI: <u>10.1038/489201a</u>



Predicting scientific success

2012 Acuna Allesina Kording. Nature (view)

Mentioned in a tweet by @emilio_ferrara.





Altmetrics tools: Impactstory



- Impactstory is a not-for-profit, web-based service that creates a researcher profile and can be used to track the impact of articles, datasets, posters, slide decks, software products and webpages.
- The site offers a 30-day free trial and, after that, makes a charge for continued use.
- The Impactstory software is open source.
- Its development is funded by the National Science Foundation and the Alfred P. Sloan Foundation;
- It can be used by researchers who want to know more about the engagement with their research beyond citation impact, such as how many times their work has been downloaded and shared, and also by research funders who are interested in the impact of research beyond only considering citations to journal articles;
- Researchers can create an Impactstory profile and upload publications to the site by importing citations and more from Google Scholar, ORCID, Figshare, GitHub, Slideshare and other sources or entering a PMID, digital object identifier (DOI) or URL;
- Impactstory tracks citations, saves, views, and discussions from sources such as Scopus, Mendeley, PLOS, Twitter and Figshare;
- As well as viewing altmetrics, researchers can also see a geographical distribution of the impact of their research;
- It is free to create an Impactstory account, but it does first require a Twitter account to register.
- It can be also integrated with ORCID, which allows o easily see all the online engagement with all research in one spot.





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Normalization attempts of altmetrics

Outputs of the NISO Alternative Assessment Metrics Project. A Recommended Practice of the National Information Standards Organization

(2016):

- 1. Transparency:
- how data are generated, collected, and curated (T1);
- how data are aggregated, and derived data generated (T2);
- when and how often data are updated (T3);
- how data can be accessed (T4);
- how data quality is monitored (T5).

2. Replicability:

- the provided data is generated using the same methods over time (R1);
- changes in methods and their effects are documented (R2);
- changes in the data following corrections of errors are documented (R3);
- data provided to different users at the same time is identical or, if not, differences in access provided to different user groups are documented (R4);
- information is provided on whether and how data can be independently verified (R5).
- 3. Accuracy:
- the data represents what it purports to reflect (A1);
- known errors are identified and corrected (A2);
- any limitations of the provided data are communicated (A3).





Example of data aggregator's report

NISO RP-25-2016 Alternative Assessment Metrics Project

NISO Altmetrics Working Group C "Data Quality" – Code of Conduct Self-Reporting Table

Example for data aggregator: Facebook

Item	Description	Supports CoC Recommendation	Aggregator / Provider Submission*	Last update of self- reporting table**
#1	List all available data and metrics (providers and aggregators) and altmetric data providers from which data are collected (aggregators).	Τ1	Facebook provides different online-event counts for a specific URL. These counts comprise "shares," "likes," and "comments". Aggregates are provided for the each of these social shares based on the total number of Facebook users who have shared, liked, or commented on a particular URL, respectively. Shares, likes, and comments that are public (i.e., are not restricted to specific user groups) contain further information such as the user name and time of event. Available data are further described in the Graph API documentation: <u>https://developers.facebook.com/docs/graph-api</u> .	2016/02/05
#2	Provide a clear definition of each metric.	A1	 Facebook provides the following event counts: Shares represent the number of times a particular URL has been shared by Facebook users on their own or other users' Facebook walls. Shares are thus posts that include a URL. Shares that are made available publicly (i.e., those for which access is not restricted to a certain user group) include the information about by whom and when the URL was shared. Each user can share the same URL multiple times; aggregated share counts thus do not necessarily reflect the number of unique users who have shared that URL. 	2016/02/05





Example of data aggregator's report

NISO RP-25-2016 Alternative Assessment Metrics Project

NISO Altmetrics Working Group C "Data Quality" – Code of Conduct Self-Reporting Table

Example for data aggregator: Plum Analytics

ltem	Description	Supports CoC Recommendation	Aggregator / Provider Submission*	Last update of self- reporting table**
#1	List all available data and metrics (providers and aggregators) and altmetric	T1	Plum Analytics has a suite of products called PlumX. A description of each PlumX product can be found on our <u>product pages</u> .	2016/03/31
	data providers from which data are collected (aggregators).		PlumX collects metrics data from many sources and groups them into 5 categories of metrics. Sources for each category are defined below:	
			Usage – bepress, bit.ly, CABI, Dryad, DSpace, EBSCO, ePrints, Facebook, figshare, Forbes, Github, Institutional Repositories, OJS Journals, PLOS, PubMedCentral, Pure, RePEc, Slideshare, SSRN, WorldCat.(See more information at <u>http://plumanalytics.com/learn/about-metrics/</u> usage-metrics/)	
			Captures – Delicious, EBSCO, GitHub, Goodreads, Mendeley, SlideShare, Vimeo, YouTube (See more information at <u>http://plumanalytics.com/learn/</u> <u>about-metrics/capture-metrics/</u>)	
			Mentions – Amazon, blogs, Facebook, GitHub, Goodreads, mainstream media, Reddit, Slideshare, SourceForge,	
			StackExchange, Vimeo, YouTube, Wikipedia (See more information at <u>http://plumanalytics.com/learn/about-metrics/</u> mention-metrics/)	
			Social Media – Amazon, Facebook, Figshare, Google Plus, Goodreads, SourceForge, Reddit, Twitter, Vimeo, YouTube (See more information at <u>http://plumanalytics.com/learn/about-metrics/social-media- metrics/</u>)	
			Citations – CrossRef, PubMed Central, PubMed Central Europe, RePEc, Scopus (for mutual customers), SSRN, United States Patent and Trademark Office (See more information at <u>http://plumanalytics.com/learn/about-metrics/</u> <u>citation-metrics/</u>)	





Case study no. 1: Altmetrics in assessment of individual achievements



INFORMACIA

I KƏMUNIKACJA



100

Scopus

Web of Science

MK	Kowalska-Chrzanowska, Małgorzata Sowalska-Chrzanowska, Małgorzata) icolaus Copernicus University Web of Science ResearcherID: O-5057-2015 Share this profile
Published names (1)	Kowalska-Chrzanowska, Malgorzata Kowalska, Malgorzata
Published Organization(1)	Nicolaus Copernicus University
Subject Categories BETA	Information Science & Library Science; Education & Educational Research
Other Identifiers	bttps://orcid.org/0000-0002-2839-5732









Google Scholar

1	-	Małgorzata Kowalska-Chrzanowska 🖌		FOLLOW	Cited by		VIEW ALL
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	to	crowdsourcing information science digital resources infobroking sciento	metrics		h-index	7	5
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	Digitalizacja zł M Kowalska	oiorów w bibliotekach polskich-próba oceny doświadczeń krajowych	9	2006			
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2	Toruńskie Studia	Bibliologiczne 1 (2008), 95-112				Przemysław Krysiński Nicolaus Copernicus Univ	versity (





INFORMACJA



Case study no. 2: Altmetrics in assessment of scientific discipline (communication and media studies)



Polish Science database: Scientists





The Polish Scientific Bibliography



Kowalska-Chrzanowska, Małgorzata; Krysiński, Przemysław (2020). Role of Social Networking Services for Scientists in Promoting Scientific Output on Example of Polish Representatives of Social Communication and Media Sciences. *Global Knowledge, Memory and Communication*, Vol. 69, Iss. 8/9, pp. 717–736.





Presence of representatives of the communication and media studies (n=100) in the analyzed databases





Databases	Number of scientist's profiles confirmed for publications in 2017– 2019	Number of publications in the period of 2017-2019 identified in the	Number of pul 2017–2019 iden credit for scier	er of publications in the period of 019 identified in the database, with for scientific degrees and titles of the authors			
		Gatabase	professor	Ph. D., habil	Ph. D.		
Polish Science database: Scientists	5	56	15	22	29		
Bibliographies of scientific achievement providing by universities	29	167	29	103	93		
Polish Scientific Bibliography (reporting module)	42	289	66	101	122		
Polish Scientific Bibliography (repository module)	26	445	127	209	109		
POL-Index	33	115	6	57	52		
Web of Science	19	45	1	26	18		
Scopus	23	54	4	36	14		

Number of publications authored by the Polish representatives of the communication and media studies (n=100) in 2017–2019, identified in the analyzed databases





Types of publications									
Databases	papers in periodicals	chapters in collective works	monographs and collective works	Total					
Polish Science database: Scientists	47	7	2	56					
Bibliographies of scientific achievement providing by universities	51	78	38	167					
Polish Scientific Bibliography (reporting module)	109	157	23	289					
Polish Scientific Bibliography (repository module)	169	197	79	445					
POL-Index	115	0	0	115					
Web of Science	37	8	0	45					
Scopus	51	2	1	54					

Types of publications authored by the Polish representatives of the communication and media studies (n=100) in 2017– 2019, identified in the analyzed databases







ResearchGate



<u>+</u>	
Service	Evaluated elements
Google Scholar	 presence of the scientist's profile in the service; publications in the period of 2017–2019: number of publications, types of publications, type of access to publication (link to publisher's page, link to repository), number of citations.
<u>ResearchGate</u>	 presence of the scientist's profile in the service; number of profile's followers; number of queries in 2017–2019; number of replies in 2017–2019; publications in the period of 2017–2019: number of publications, types of publications, type of access to publication (full text, on-demand file, link to publisher's page, link to platform or periodicals database, link to another service for scientists), number of views, number of citations, number of recommendations.
Academia.edu	 presence of the scientist's profile in the service; number of profile's followers; publications in the period of 2017–2019: number of publications, types of publications, type of access to publication (full text file, on-demand file, link to publisher's page, link to platform or periodicals database, link to another service for scientists), number of views, number of citations, number of recommendations.







Presence of representatives of the communication and media studies (n=100) in the analyzed social networking services for scientists



	Total number of scientist's	Number of scientist's profiles	Number of publications in the period	Number of publications in the period of 2017–2019 identif in the services, with credit for scientific degrees and titles the authors				
Service	profiles identified in the services	confirmed for publications in 2017–2019	of 2017-2019 identified in the services	professor	Ph.D., habil.	Ph.D.		
Google Scholar	35	24	173	41	46	86		
ResearchGate	37	29	177	14	95	68		
Academia.edu	41	12	79	5	11	63		

Number of publications authored by the Polish representatives of the communication and media studies (n=100) in 2017–2019, identified in the analyzed social networking services for scientists





Case study 2

		Types of publication									
Services	papers in periodicals	chapters in collective works	monographs and collective works	conference speeches	translations	essays	interviews	preprints	multimedia presentations	encyclopaedic entries	Total
Google Scholar	114	18	16	0	0	0	0	0	1	24	173
ResearchGate	109	26	20	16	0	0	0	5	1	0	177
Academia.edu	52	4	13	0	6	1	3	0	0	0	79

Types of publications authored by the Polish representatives of the communication and media studies (n=100) in 2017–2019, identified in the analyzed social networking services for scientists





Case study no. 2 (related research from 2022)

Table 2. Usage of services and platforms for scientists in the entire group of respondents.

No.	Website for scientists	N=570	%
1	Academia.edu	294	51.5
2	ResearchGate	246	43.1
3	Google Scholar	246	43.1
4	Scopus	148	25.9
5	Publons	78	13.6

Kisilowska-Szurmińska, Małgorzata; Świgoń, Marzena; Głowacka, Ewa (2022). The use of Academia.edu, ResearchGate, Google Scholar, Scopus, and Publons among the Polish researchers of social communication and media sciences, *Przegląd Biblioteczny*, nr 2, s. 137– 169

Table 9. Number of publications in Scopus in the study group (N=148)

No	Number of publications in Scopus	N=148	%
1	over 40 publications	2	1.30
2	from 21 to 40	3	2.10
3	from 11 to 20	7	4.70
4	from 1 to 10	136	91.80
	Total	148	100

Table 5. Number of publications on RG among account holders (N=246)

	Number of publications on RG	N=246	%
1	over 40 publications	18	7.3
2	from 21 to 40	28	11.3
3	from 11 to 20	55	22.3
4	from 1 to 10	110	44.7
5	no publications	35	14.2
	Total	246	100

Table 10. Number of citations in Scopus in the study group (N=148)

No.	Number of citations in Scopus	N=148	%
1	no citations	83	56.00
2	from 1 to 20	45	30.40
3	from 21 to 40	11	7.40
4	from 41 to 100	5	3.40
5	from 100 to 1,000	3	2.00
6	over 1000	1	0.60
	Total	148	100

Table 3. Full texts of publications in the accounts of Academia.edu users in the study group (N=294).

No	Number of full texts of publications on Academia.edu	N=294	%
1	over 40 publications	10	3.4
2	from 21 to 40	12	4.1
3	from 11 to 20	21	7.1
4	from 1 to 10	<mark>9</mark> 6	32.6
5	no publications	155	52.7
	Total	294	100





Case study no. 3: Altmetrics in assessment of selected research area



Scopus

"university library" OR "academic library"

8 document results

(KEY ("university library" OR "academic library") AND AFFILCOUNTRY (poland)) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2013)) OR LIMIT-TO (PUBYEAR, 2016) OR LIMIT-TO (PUBYEAR, 2013))







Articles	Citations	Mendeley	EBSCO- Saves	EBSCO- Views	Twitter	Facebook	Blogs
1	14	111	0	0	5	2	0
2	0	0	0	0	0	0	0
3	8	16	0	0	0	1	1
4	0	7	0	0	0	0	0
5	13	113	42	438	3	0	0
6	42	184	2	70	4	0	0
7	5	21	0	2	0	0	
8	0	11	22	399	0	0	0
TOTAL	82	463	64	837	12	3	1





Pearson correlation coefficient

Citations vs Mendeley	0,925015
Citations vs EBSCO Views	-0,03609







Advantages of altmetrics



They help provide a fuller picture of the use of research than citation counts alone.



They can demonstrate broader impact because they allow to show how people from outside of academia have interested on science.



They allow measurement of early reaction to papers because social media, for example, can provide feedback on research in less time than citations in journal articles.



As an indicator of engagement and potential reach of research, qualitative altmetric data may supplement and affirm actual impacts and applications of research by the target audience or stakeholders.



Altmetric data captures a range of interactions such as comments, posts, tweets about research activities via the social web and mainstream media, as well as article level metrics very quickly. In this way they help to see the extent to which research is being shared and discussed by others.



They may determine future citations.



Comments and conversations about research gleaned via the social web may facilitate connections with potential collaborators at a global level, both within the academy and beyond.





Disadvantages of altmetrics



To date there is no normalization of altmetrics and guidelines for their aggregating.



Altmetrics look at how many times research is used or mentioned but not at the context. As a result, a simple altmetric count cannot be used to demonstrate the value of research alone.



Altmetrics are fast, but temporary.



Some articles get mentioned on social media because they relate to popular topics, not because they are examples of good research.



Altmetrics can be abused by individuals who want to artificially increase their altmetric scores.



Altmetrics data is used inconsistently across academic disciplines.

To date there is no consensus regarding the use of altmetrics to support faculty tenure applications, grant applications and overall scholarly research impact





Conclusions







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Thank you for your attention

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